1: J Clin Pharmacol. 2002 May;42(5):547-57.

Clinical pharmacokinetics of verteporfin.

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Verteporfin, a benzoporphyrin derivative, is the first photo-sensitive (light-activated) drug to be proven effective in treating certain types of choroidal neovascularization (CNV) secondary to age-related macular degeneration (AMD). The pharmacokinetics of light-activated drugs are central to their safety and efficacy. Forty healthy Caucasian volunteers, 24 healthy Japanese volunteers, 9 patients with mild hepatic dysfunction, 69 patients with CNV due to AMD, and 21 patients with skin cancer were infused with verteporfin 3 to 20 mg/m2 of body surface area over 1.5 to 45 minutes. Verteporfin regioisomers and the metabolite benzoporphyrin derivative diacid (BPD-DA) were quantified by validated methods of liquid chromatography and capillary electrophoresis with laser-induced fluorescence. Cmax of verteporfin occurred at the end of the infusion and was proportional to the dose and rate of infusion. The extent of formation of the metabolite BPD-DA was less than 10%, based on the AUC ratio. Renal elimination was minimal (< 0.01% of the dose). All groups studied had similar pharmacokinetics, which were biexponential with distribution in the first 1 to 3 hours and elimination t(1/2) of 5 to 6 hours. No significant differences were observed between Japanese and Caucasian volunteers or between men and women. Patients older than 65 years had a slightly higher average Cmax than patients younger than 65 years (1.14 vs. 1.03 microg/ml, p = 0.066), but the ranges of the two age groups overlapped. Verteporfin has a short half-life and is rapidly eliminated in the bile, mainly as unchanged drug. Based on pharmacokinetic data, dose adjustments are not required for age, gender, race, or mild hepatic or renal impairment. The rapid elimination of verteporfin shows that the period of skin photosensitivity is unlikely to persist after 24 to 48 hours.

Publication Types:
- Clinical Trial
- Multicenter Study
- Randomized Controlled Trial

PMID: 12017349 [PubMed - indexed for MEDLINE]

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Sep 4 2003 10:00: